the use of tonics, a nutritious diet, and, externally (?), an antiphlogistic treatment. She now became stronger, and the sore less irritable. In examining the latter, he found the probe to come in contact with what seemed like loose bones. The wound being enlarged about two inches in length, by dividing longitudinally the abdominal parietes, Dr. L. was enabled to remove at once some twenty fœtal bones, and others a few days afterwards. With the broad bones he had some trouble, from the small size of the opening; considerable hemorrhage attended their extraction. The former treatment was continued until the patient was well, and the wound had entirely healed. She is now enjoying excellent health, with the anticipation of living to quite an old age.

The *Transactions* conclude with the essay by Jean Baptiste Ullersperger, of Munich, in the Kingdom of Bavaria, to which was awarded the prize of the Society for 1867. Its title is, "La Transfusion et l'Infusion anciennes mises en parallèle avec la Transfusion, l'Infusion, et les Injections Hypodermatiques ou Sous-cutanées modernes." The original essay is followed by a translation in English, by Dr. C. H. Wittig, of Philadelphia.

The essay exhibits much learning and research. It furnishes a very full history of transfusion, infusion, and subcutaneous injection, and the use and value of these different procedures as therapeutic agents. The essay cannot be read but with interest, while it is not deficient in valuable practical instruction.

D. F. C.

ART. XXXI.—*A Treatise on Therapeutics, and Pharmacology or Materia Medica.* By GEORGE B. WOOD, M. D., President of the American Philosophical Society; President of the College of Physicians, of Philadelphia; Emeritus Professor of the Theory and Practice of Medicine in the University of Pennsylvania, &c. Two volumes, pp. 838, 990. Philadelphia: J. B. Lippincott & Co., 1868.

WHEN Dr. Wood's work on Therapeutics first appeared in 1856, we expressed our conviction that it fully sustained the high reputation of its author, and the same remark is applicable to the present edition. It embraces a full account of all the reliable discoveries in Therapeutics and improvements in Pharmacy, which have been since developed by the ever-increasing activity in those departments of medical science. The revision of the original text and the incorporation of so much new matter—a work of great labour and difficulty—have been completed with the conciseness, clearness, and precision characteristic of the author.

In the classification we note several interesting changes which "the progress of the science has rendered advisable." The Calabar Bean is introduced as Class IV. of General Sedatives, under the head *Spinal Sedatives;* and a full account of what is up to this time known concerning that singular and powerful drug, thus prefaced: "As there is but one agent which I could place strictly under the spinal stimulants[1]—nux vomica, namely, and other vegetable products characterized by the presence of strychnia—so there is but one which I can attach to the present class—the newly-discovered Bean of Calabar." Although thus placing it as a "direct sedative of the spinal centres." Dr. Wood observes that it has not yet been satisfactorily successful in the treatment of either tetanus or strychnia-poisoning; and adds, that it yet remains in a considerable degree undetermined how far its therapeutic usefulness may correspond with our impressions in relation to its properties.

Two new classes of non-systemic remedies have been formed in order properly to arrange several substances of peculiar powers; one embracing the *Disinfectants*, "which chemically destroy noxious and fetid exhalations; and *Parasiticides*, which are destructive to the lower forms of animal and vegetable existences, located in the human body, and acting injuriously upon it. These last named include the two subclasses of *Anthelmintics*, which favour the expulsion of worms from the bowels; and *Antizymotics*, which are destructive of those microscopic organisms which support fermentation, and thus probably cause and sustain the proper zymotic diseases."

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[1] As heretofore, Dr. Wood places ergot among the local remedies, under the head "uterine motor stimulants."

The disinfectants are considered under the heads of agents operating mechanically: *Cleanliness, ventilation, charcoal, lime*—and agents operating chemically: 1. Oxidizing disinfectants, comprising *ozone, chlorine, bromine, iodine, permanganate of potassa, peroxide of hydrogen*, and *mineral acids* with their *metallic salts;* 2. Deoxidizing disinfectants, comprising *sulphurous acid* and the *sulphites, nitric oxide, sulphate of the protoxide of iron*, and *ammonia;* 3. Neutralizing disinfectants, including *carbolic acid* with analogous substances, *chloride of zinc* and *chloride of iron*.

The articles regarded by Dr. Wood as antizymotics are *sulphur, sulphurous acid*, the *sulphites* and *hyposulphites, carbolic* and *cresylic acid* and *creasote, tar* with *impure pyroligneous acid, smoke, petroleum*, and *saccharine solutions*. He has given a comprehensive statement of the prevailing views concerning fermentation, purulent infection, and septicæmia, presenting also the results of treatment adopted in accordance therewith. Though we are not prepared to accept as satisfactory all the observations recorded, we can indorse the opinion that "the trials of the sulphites internally administered, while not absolutely conclusive as to their power of modifying or preventing the so-called zymotic diseases (especially in view of contrary results said to have been obtained by others), are certainly very encouraging, and should stimulate to still further efforts in the same direction."

Of the numerous subjects considered at length with reference to opinions recently advanced by prominent members of the profession, we can notice but two; the supposed antagonism between belladonna and opium, and the character of the action of digitalis upon the heart.

"Much has been said of an antagonistic relation between opium and belladonna, in their effects on the system, which is supposed to render them, to a certain extent, mutually antidotal in cases of poisoning from either." * * * Dr. W. says: "I have examined many of the reported cases, and have come to the conclusion that we should not be justified by anything which has yet been published, in relying practically upon the entire adequacy of either of these narcotics for the prevention of the poisonous effects of the other, and especially upon that of belladonna to obviate the danger from excessive doses of opium." After a clear statement and careful analysis of the question, and of all facts reported in connection with it, Dr. Wood repeats the conclusion that "it would be very hazardous to trust a case of poisoning from belladonna or opium exclusively to the supposed antidotal powers of either. Still, both of these narcotics may be advantageously used with due attention to their special influences. Thus the excessive agitation of belladonna poisoning, and the prostration of its advanced stage may be relieved by the composing and stimulant influence of opium; while the stupor and depression which mark the later stage of the effects of opium, may be counteracted by the supporting and agitating action of belladonna; but care should be taken that the two do not coincide in their poisonous effects; that is, that neither the early nor the advanced stages of their action should come together. The observations of Drs. Mitchell, Keen, and Morehouse, and of Dr. Da Costa, upon the action of atropia and morphia, are presented in a note at the end of the article on belladonna.

The views expressed by Dr. Wood in regard to the effects of digitalis upon the system seem to be so correct, and have such immediate and important connection with its proper therapeutic application, that we quote them at length. "The opinion has recently been put forth by Dr. Fuller, of London, and has received the support of several writers, that digitalis, so far from being sedative to the heart, is in fact tonic in its influence on the cardiac muscular fibres. This opinion is founded mainly on the fact that digitalis proves most useful in those cases of disease of the heart in which that organ is dilated and enfeebled; and that instead of further weakening the heart it gives greater energy to its actions. But I believe that this view is incorrect, and that its advocates have been led into error by confounding depression of action with diminution of power. Those who maintain the sedative action of digitalis upon the heart, do not maintain that it has the power of directly diminishing the power of that organ. On the contrary, it may even increase the strength of a diseased heart indirectly by diminishing its action. In reducing the frequency of the heart's action it operates through the nervous centres and not directly on the heart itself. It is, therefore, depressing or sedative to the cardiac actions without immediately affecting the organ. The effect of morbidly increased action on a heart already weak is to increase its weakness by exhaustion. Whatever, therefore, depresses this excessive action without immediately acting on the heart, prevents its further exhaustion under the over-exertion, and gives it an opportunity to recover its powers partially through comparative rest. Thus digitalis may indirectly strengthen the heart, while acting as a sedative to its function. The idea that it is really tonic to the heart is a very dangerous one, as it may lead to its use under circumstances when it can do only harm; that is, in which the heart may be greatly debilitated and yet not over-excited; where not only the heart is weak, but the pulse is slow and also weak. According to Dr. Fuller and the advocates of his hypothesis digitalis proves fatal by a tonic contraction and spasm of the heart." But this directly conflicts with both the general symptoms of prostration, and the special conditions of the pulse, always noted before death, and the constriction of the heart and orifices reported in post-mortem examinations, has yet been observed in too small a number of instances to justify any conclusions from it. Neither does the idea of the tonic property of digitalis receive any real support from its asserted favourable influence in delirium tremens, and its supposed contractile influence over the uterus. In the former case, if useful at all, it must act by simply reducing action and not diminishing power; and the enormous doses of this drug sometimes administered become exceedingly dangerous by producing this effect in such degree that the heart ceases to be adequately supplied with blood in its own tissues, and becomes therefore completely prostrated. Dr. Wood entirely agrees with Dr. Fuller in believing that digitalis does not act by paralyzing the muscular fibre of the heart; but this does not require the admission of the hazardous idea that it is tonic to the organ. It operates simply, as before stated, by depressing the action of the nerve-centres which regulate the heart's action.

The stimulating influence of mercury upon the bile-forming function of the liver, Dr. Wood again states as, in his opinion, one of the most certain and best proved effects of that medicine. We note this with interest, since some authors have questioned the point. Apart from the testimony of Dr. Wood and other observers, we have long regarded the researches of Dr. Michea (published in *L'Union Médicale*, 1849) as entirely conclusive. These investigations were undertaken after the doubts expressed by MM. Trousseau and Pidoux, and demonstrated by chemical analysis that "calomel acts in a special and direct manner upon the liver, producing an excess of bile."

Besides the additional matter already alluded to under the new heads of classification, and sufficient notices of remedial substances of minor importance, we find in this edition articles of considerable length upon *cocoa, nitrous oxide, antimoniated hydrogen, gelseminum, bromine and its preparations*, and *lithia with its carbonate and citrate*. The use of liquids in the form of spray in pulmonary therapeutics, and the hypodermic method of medication, receive due attention.

At the close of the second volume an appendix is introduced containing lists of the alterations which have been made in the new (second) edition of the British Pharmacopœia, the references in the body of Dr. Wood's work having been prepared in accordance with the first edition of 1864. Any serious misapprehension is thus prevented by the opportunity furnished of comparison between the two.

No topic having a direct bearing upon the subject of this treatise, has been neglected in preparing the third edition; and we agree with the author that he "may justly say that, whatever may have been the merits of the former editions, as exhibiting the condition of Materia Medica at the periods, respectively, when they were issued, the present will not be found to have deteriorated as representative of the existing state of the science." E. R.